

REMARKS

Claims 1-13, as amended, remain in this application for the Examiner's review and consideration. The claims have been amended to correct informalities and to more clearly define the scope of protection sought by the present application. In particular, claim 1 has been amended to recite that the method includes identifying a plurality of moving objects where each moving object comprising a position, a speed and a direction and identifying a plurality of moving queries capable of evaluating the moving objects using criteria that change over time. In addition, the method includes constructing a moving object bounding box associated with each moving object such that each moving object bounding box comprises dimensions corresponding to at least one of the position, the speed and the direction of the associated moving object and constructing a moving query bounding box associated with each moving query such that each moving query bounding box comprises dimensions corresponding to one or more of the criteria. Each bounding box is sized to minimize overlapping among all bounding boxes and to maximize a length of time that the criteria of each moving query and the position, speed or direction of each moving object remain within the associated bounding box. The remaining claims all depend either directly or indirectly from claim 1 and were amended in compliance with the amendments to claim 1. Support for all of these amendments can be found in the specification and claims as originally filed and in particular at page 5, lines 10 and 19-27, page 6, lines 6-8, page 7, line 13, page 8, lines 6-7 and 20-29, page 9, lines 1-2 and 11-22 and page 10, lines 1-2 and 14-29. As these amendments do not introduce any new matter into the above-identified application, their entry at this time is warranted.

Claims 1-13 were rejected under 35 U.S.C. § 112, second paragraph, for the reasons given in paragraph 2-5 the Office Action. It was asserted that the claims comprise vague limitations and in particular that the undefined size and shape of the bounding box make the invention vague. Applicants assert that the present amendments to the claims overcome this rejection for the reasons that follow.

As currently recited in claim 1, a plurality of moving objects and a plurality of moving queries are identified. The moving objects have an associated position or value, a speed or rate of change of that position and a direction to that rate of change. The speed and direction constitute a

vector quantity as explained in the specification and known in the art. The queries contain criteria or parameters for the moving objects, i.e., a given value, location or direction of motion. In general, these queries are associated with a temporal or spatial range. These queries are not stationary but move, in particular with respect to the moving objects. As defined in the specification, this motion can be associated with a focal object to which the query is associated. Since the number of moving objects can be large and the objects and queries are in motion, the computational demands of solving the queries can be significant. Therefore, the number of moving objects that need to be considered at a particular time for a given moving query is reduced through the use of bounding boxes.

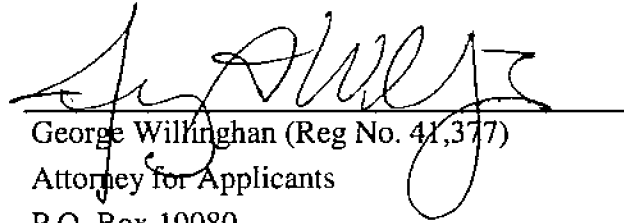
Bounding boxes are defined throughout the specification and are multidimensional spaces that can be related to, for example, two dimensional or three dimensional shapes, for example a circle or a square. The dimensions, therefore, correspond to the sides of a geometric object. However, the dimensions can relate to non-geometric values, for example the value of a stock, and the space is not limited to three dimensions. As currently recited in claim 1, moving object bounding boxes are created that have dimensions corresponding to one or more of the location, speed and direction of the moving objects. For example, these dimensions can be the location of the object in a two dimensional space defining, for example a rectangle. Similarly, claim 1 recites that a moving query bounding box is constructed having dimensions corresponding to one or more of the criteria of each moving query. As recited in claim 1, the size or magnitude of each dimension for either object or query bounding boxes is selected to minimize overlap among all boxes and to maximize the time that the moving objects and moving queries spend within the associated bounding box. As described in the specification, a moving query or moving object is within a bounding box when the parameters of the query or object are within the range of the dimensions of that constitute a given bounding box.

The moving objects and moving queries are indexed based upon the associated bounding boxes and not the actual values of the parameters. The bounding boxes, being used in the indexes are used in the evaluation of the moving queries over the moving objects. Therefore, as presently amended, claim 1 particularly points out and distinctly claims the subject matter of the present invention, and Applicants request that this rejection be withdrawn.

Applicants assert that all claims are now in condition for allowance, early notification of which is respectfully requested. Should the Examiner feel that issues still remain regarding the allowance of all pending claims, the Examiner is invited to call Applicants' representative at the number provided below. As the present amendments do not introduce any new claims above the original number of filed claims and this amendment is being filed with the shortened statutory period for reply, no fees are believed due for the submission of this amendment.

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Respectfully submitted,



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